

INTRODUCTION

The Environmental Assessment (EA) is a site specific analysis of potential environmental impacts that could result with the implementation of a proposed action. The EA assists the Agency in project planning and insuring compliance with the National Environmental Protection Act (NEPA) and making a determination as to whether any "significant" impacts could result from proposed actions. This EA has been prepared for the Swiftwater Resource Area's proposed **WHATAGAS Regeneration Harvest**. This proposal is in conformance with the *Final - Roseburg District Proposed Resources Management Plan / Environmental Impact Statement* (PRMP/EIS) dated October 1994 and its associated *Roseburg District Record of Decision and Resources Management Plan* (RMP) dated June 2, 1995. The RMP was written to be consistent with the *Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old Growth Forest Related Species Within the Range of the Northern Spotted Owl* (FSEIS); dated Feb. 1994 and its associated *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* (ROD) and *Standards and Guidelines for Management of Habitat for Late-Successional and Old Growth Related Species Within the Range of the Northern Spotted Owl* (S&G's) dated April 13, 1994; and generally referred to as the "Northwest Forest Plan" (NFP). The ROD establishes management direction consisting of ". . . extensive standards and guidelines including land allocations, that comprise a comprehensive ecosystem management strategy" (ROD pg. 1).

The project described in this EA will undergo formal public review. After the completion of public review a "Finding of No Significant Impact" (FONSI) would be signed if appropriate. A signed FONSI finds that no "significant" environmental impact (effect) would occur with the implementation of the proposed actions beyond those already addressed in the FSEIS when the Project Design Features (PDF) specified in this EA are followed. "Significance" has a strict NEPA definition and is found in regulation 40 CFR 1508.27. The FONSI documents the application of this definition of significance to the proposed action.

A Decision Document would be completed after public review to document the decision and reflect any changes as the result of public review, however, Forest Management Regulation 43 CFR 5003.2 states that "[w]hen a decision is made to conduct an advertised timber sale, the notice of such sale shall constitute the decision document." This notice would be placed in *The News Review* and constitute a decision document with authority to implement a proposed action.

I. PURPOSE OF AND NEED FOR ACTION

This section provides a general overview of the proposed action. Included are: the need for the action, a general description and background of the proposal, the issues to be analyzed, and issues eliminated from detailed analysis in this EA.

A. Need for Action

The RMP and the ROD respond to dual needs: "... the need for a healthy forest ecosystem with habitat that will support populations of native species and includes protection for riparian areas and waters. ... and the need for a sustainable supply of timber and other forest products that will help maintain the stability of local and regional economies ..." (RMP pg. 15, ROD, pg. 26). The Swiftwater Resource Area proposes to offer the **Whatagas Regeneration Harvest** for auction in fiscal year 1999 or later. This proposal would help meet the Roseburg District's annual harvest commitment or allowable sale quantity (ASQ).

B. Description of the Proposal

The proposal is to harvest timber in the Calapooya Creek Watershed located in Sections 7, 17 and 19; T. 25 S., R. 3 W., and Section 13; T. 25 S., R. 4 W., W.M. (see maps, Appendix A through C). The proposed project area is approximately 13 road miles east of Sutherlin and 17 air miles northeast of Roseburg, Oregon. Approximately 215 acres were analyzed for potential harvest activities. New temporary road construction and renovation or improvement of existing roads would also occur. Section II (pg. 4) of this EA provides a more detailed description of the Proposed Action Alternative.

The ROD (pg. 6) divides the federal land base into seven land use allocations (LUA) or categories. This project is within the "Matrix" LUA. "Stands in the matrix can be managed for timber and other commodity production, and to perform an important role in maintaining biodiversity" (S&G, pg. B-6) by providing for biological legacies (snags, large woody debris and retention trees) that bridge past and future forests. The RMP further classifies the Matrix into two categories: the "General Forest Management Area" (GFMA), lands available for timber harvest and "Connectivity / Diversity Blocks", lands that are available for timber harvest and also provide connectivity between Late-Successional and Riparian Reserves. This project is in GFMA (60% of the project) and in a Connectivity / Diversity Block (40% of the project) but not in a Key (Tier 1) Watershed.

C. Background (Watershed Analysis)

The Whatagas Regeneration Harvest project occurs within the Gassy Creek drainage. This drainage is within the Calapooya Creek Watershed (fifth-field) which covers approximately 157,195 acres (246 square miles). Current landscape patterns include natural stands that are the result of fire, managed stands established following timber harvest, and non-forested agricultural and pasture lands. A major highway (I-5) and a small town (Oakland) is located within the watershed.

Watershed analysis (WA) for the Calapooya Creek Watershed is in process and has not been completed at this time. This project was designed to harvest only on matrix lands and not enter the Riparian Reserves therefore watershed analysis would not be required since this project does not occur within a key watershed, roadless area, or Riparian Reserve (ROD, pg. B-20). The Calapooya Creek WA is expected to be completed in Summer 1999.

The RMP (pg. 34) requires that late-successional forests be retained in watersheds that comprise 15% or less late-successional forests on federal lands in fifth field watersheds, i.e., watersheds between 20 and 200 square miles (S&G, pg. C-44). Any timber stands greater than approximately 80 years of age are considered late-successional habitat (S&G, pg. B-2). For the Calapooya Creek Watershed, analysis of current forest inventories shows that of the 11,015 acres of federal ownership (7.0% of the watershed), approximately 3,870 acres (35%) are late-successional forests (80 years or older) and 2,520 acres (23%) are greater than 200 years (Old Growth). The project as proposed would remove approximately 135 acres of these stands from within the Calapooya Creek Watershed.

Five of the units are within a Connectivity / Diversity block (Section 7). The RMP (pg. 34) requires that 25 - 30% of each block be maintained in late-successional forest. This block contains approximately 500 acres. This project would remove 54 acres of late-successional forest from this block leaving 129 acres of late-successional forest (26% of the block) post harvest.

D. Objectives

1. "Produce a sustainable supply of timber and other forest commodities " and "Provide connectivity . . . between late-successional reserves" (RMP, pg. 33).
2. Implement ecosystem management as outlined in the ROD and RMP.
 - a. avoid damage to riparian ecosystems and meet the objectives of the "Aquatic Conservation Strategy" (S&G, pg. B-11; RMP pg. 19)
 - S** "Provide habitat for a variety of organisms associated with both late successional and younger forests." (RMP pg. 33)
 - S** maintain "ecologically valuable structural components such as down logs, snags and large trees" (RMP pg. 33)
 - S** improve and/or maintain soil productivity (RMP pg. 35)
 - S** "Maintain or enhance the fisheries potential of the streams . . . " (RMP pg. 40)
 - S** protect, manage and conserve all special status and Supplemental Environmental Impact Statement special attention species habitat (RMP pg. 41)

E. Decisions to be Made to Meet Proposal Objectives

1. The Decision Maker (the Swiftwater Field Manager) will need to decide:
 - S** if this analysis supports the signing of a FONSI.
 - S** whether to implement the Proposed Action Alternative, modify the Proposed Action Alternative, or accept the No Action Alternative.
2. Consultation with the National Marine Fisheries Service (NMFS) will need to be completed for the Cutthroat trout, steelhead trout and Coho salmon; and the U.S. Fish and Wildlife Service (FWS) for threatened or endangered terrestrial animals. This project may have to be altered as the result of these consultations (See Section V, para. A).
3. The road decommissioning proposal is subject to the approval of the Lone Rock Timber Co.

F. Issues Considered but Eliminated from Detailed Analysis

The Interdisciplinary (ID) Team identified the following concerns during project design. They were eliminated from further analysis because: (1) PDF included in the preferred alternative would sufficiently mitigate the anticipated environmental impacts of specific activities, or (2) the impacts are within the limits addressed in the ROD/RMP. Section II, paragraph C (pg. 5) provides a list of specific PDF incorporated into the preferred alternative to deal with these issues. These issues are summarized in Appendix D ("Issue Identification Summary") and addressed the Specialist's Reports in Appendix F.

1. Soils
 - a. Unstable and Potentially Unstable Areas
 - b. Slope Stability Concerns
 - c. Sensitive (Category 1) Soils
 - d. Soil Productivity Loss and Erosion
2. Wildlife
 - Potential for slugs and snails
3. Adjacent Landowner Concern
 - Depletion of Old Growth patches and remnants in the drainage

"Critical Elements of the Human Environment" is a list of elements specified in BLM Handbook H-1790-1 that must be considered in all EA's. These are elements of the human environment subject to requirements specified in statute, regulation, or Executive Order. These elements are as follows:

1. Air Quality
2. Areas of Critical Environmental Concern (ACEC)
3. Cultural Resources
4. Environmental Justice
5. Farm Lands (prime or unique)
6. Floodplains
7. Native American Religious Concerns
8. Threatened or Endangered Species
9. Wastes, Hazardous or Solid
10. Water Quality, Drinking / Ground
11. Wetlands / Riparian Zones
12. Wild and Scenic Rivers
13. Wilderness

These resources or values (except item #8) were not identified as issues to be analyzed because: (1) the resource or value does not exist in the analysis area, (2) no site specific impacts were identified, or (3) the impacts were considered sufficiently mitigated through adherence to the S&G's therefore eliminating the element as an issue of concern. These issues are also briefly discussed in Appendix E ("Critical Elements of the Human Environment"). Item #8 is addressed in the Specialist's Reports (Appendix F) and the Biological Assessment which is prepared for Endangered Species Act consultation.

G. Issues to be Analyzed

The ID Team noted the deteriorated state of the transportation system within the drainage of this project, the opportunities for the decommissioning of unneeded spurs and the impacts that the road system is having on water quality. The following concern was identified as having sufficient potential to warrant more detailed analysis:

The Impacts of the Deteriorating Transportation System on Water Quality

This issue will be addressed in Section IV, "Environmental Consequences" (pg. 11) as a key issue.

II. ALTERNATIVES INCLUDING THE PREFERRED ALTERNATIVE

This section describes the No Action and Proposed Action alternatives, and any alternatives considered but eliminated from analysis. These alternatives represent a range of reasonable potential actions. This section also discusses specific design features that would be implemented under the action alternative. The action alternative was designed to be in conformance with the RMP.

A. The No Action Alternative

The No Action Alternative is required by NEPA to provide a baseline for the comparison of the alternatives. This alternative represents the existing condition. If this alternative were selected there would be no harvesting of timber within the bounds of the project area. Harvest would, however, occur at another location within Matrix lands in order to meet harvest commitments. Selection of this alternative would not constitute a decision to reallocate these lands to non-commodity uses. Future harvesting in this area would not be precluded and could be analyzed under a subsequent EA.

B. The Proposed Action Alternative

Implementation of the Proposed Action Alternative would result in the harvest of 0.62 MCF (thousand cubic feet) or approximately 4.3 MMBF (million board feet) of the Roseburg District's FY 1999 harvest commitment of 7.0 MCF (45 MMBF). A small amount of additional timber could potentially be included as a modification to this project. These additions would be limited to removal of individual trees or small groups of trees that are blown down, injured from logging, are a safety hazard, or are trees needed to facilitate the Proposed Action (ex. guyline and tailhold trees, trees around helicopter landings, or trees within the road construction prism). Generally these trees would be left on site as CWD or snags. Harvest activities would occur on 11 units for 135 acres of regeneration harvest. Other activities would include: temporary road construction, road renovation and improvement, road decommissioning, site preparation with fire (slash burning) and replanting with young seedlings.

Approximately 0.3 miles of temporary **road construction** (five spurs) would occur on government land. Approximately 14.9 miles of government road would have **road renovation** (restoring the road back to its original design) and 1.7 miles of government road would have **road improvement** (improving the road beyond its original design). This would consist of installing or maintaining drainage structures (culverts and ditches), removing road slides, reshaping road surfaces and surfacing with crushed rock. **Road decommissioning** - "... road segment ... closed to vehicles on a long-term basis, but may be used again in the future." (Transportation Management Plan [TMO], pg. 15) would be pursued on 1.1 miles of Government road. **Full decommissioning** - "roads determined through an interdisciplinary process to have no future need ..." (TMO, pg. 15) would be pursued on 0.3 miles of Government road (see pg. 6, para. 1d).

Timber harvest would consist of regeneration harvest. **Regeneration harvest** is designed to open the forest canopy to allow the re-establishment of a new forest stand with early seral stage vegetation (even-aged). The technique of modified even aged management and reserve seed tree harvest (RMP, pg. 150) would be used which modifies the traditional silvicultural seed tree system to include biological legacies. This legacy consists of retaining a remnant of older aged, large (>20") green trees and snags (reserve trees), and coarse woody debris (CWD). CWD consists of trees, or portions of trees, that have fallen or have been cut and left in the unit for

present and future wildlife habitat components (RMP, pg. 146) and to maintain site productivity.

The proposed action would require a mix of skyline cable logging (approximately 86 acres or 64%), helicopter logging (approximately 48 acres or 35%) and ground based (tractor) logging (approximately 1 acre of road right of way clearing or 1%). Helicopter landing locations are expected to be a minimum of one-half acre in size and no larger than one acre. Trees that are determined to be a hazard to flight operations could be cut under approval of the Authorized Officer. **Firewood cutting and salvaging** of logging debris (slash) could occur in landing cull decks. The firewood permit would address specific stipulations.

The **prescribed burning of slash** (burning under the direction of a written site specific prescription or "Burn Plan") would occur in the proposed units to prepare the site for tree planting by providing plantable spots for seedlings (i.e. clearing away the slash), removing or temporarily retarding competing vegetation as well as reducing the fuel loading hazard. Approximately 135 acres would be burned. Burning would be by a combination of broadcast burning (approximately of 11 ac.) and machine and/or hand pile and burn (maximum of 135 ac.) (see Appendix C). **Fire trails** would be constructed by hand, prior to ignition, around the perimeters of the units to be broadcast burned.

C. Project Design Features as part of the Proposed Action

This section describes the project design features (PDF) which would be incorporated in the implementation of the action alternatives. PDF's are site specific measures, restrictions, requirements or structures included in the design of a project to reduce adverse environmental impacts. These are listed in the RMP (Appendix D, pg. 129) as "Best Management Practices" (BMP) and in the ROD as "Standards and Guidelines" (S&G). BMP's are measures designed to protect water quality and soil productivity. S&G's are "... the rules and limits governing actions, and the principles specifying the environmental conditions or levels to be achieved and maintained." (S&G, pg. A-6). The proposed action includes the following PDF's :

1. **To meet the components of the "Aquatic Conservation Strategy (ACS)" (S&G, pg. B-12):**

a. **Riparian Reserves (Component #1)** would be established. Riparian Reserves consist of the lands incorporating permanently flowing (perennial) and seasonally flowing (intermittent) streams, the extent of unstable and potentially unstable areas that may directly impact streams, and wetlands. The ROD (C-30) and RMP (pg. 24) specify Riparian Reserve widths equal to the height of two site potential trees on each side of fish bearing streams and one site potential tree on each side of perennial or intermittent nonfish bearing streams. Data has been analyzed from District inventory plots and the height of a site

potential tree for the Calapooya Creek watershed has been determined to be the equivalent of 180 ft. slope distance. Therefore, Riparian Reserve boundaries would be approximately 180 ft. slope distance from the edge of nonfish bearing streams and 360 ft. from fish bearing streams in the project area. There is a fish-bearing stream (Gassy Creek) adjacent to unit 19A.

1) Streambank stability and water temperature would be protected and maintained by the NFP prescribed Riparian Reserve along all streams. Approximately 30 acres were removed from the proposed units and placed in the Riparian Reserve LUA due to unmapped streams.

2) Riparian habitat would be protected from logging damage by directionally felling trees that are within 100' of Riparian Reserves away from the reserve and yarding logs away from or parallel to the streams (i.e. logs would not be yarded across streams). No logging or road building would take place within the Riparian Reserves.

3) A wet area greater than one acre was found within the project area (outside Unit 17A). The riparian vegetation of this wetland would be protected by maintaining a full width buffer between it and the unit and include this area within the Riparian Reserve LUA. Approximately one acre was dropped from harvest consideration to buffer this feature.

4) Seven acres of unstable or potentially unstable ground were removed from the project and included in the Riparian Reserve.

b. **Key (Tier 1) Watershed (ACS Component #2)** were established “as refugia ... for maintaining and recovering habitat for at-risk stocks of anadromous salmonids and resident fish species [RMP, pg. 20: S&G, pg. B-18].” This project is not in a Key Watershed.

c. **Watershed Analysis (ACS Component #3)** has not been completed for this watershed (see pg. 2).

d. **Watershed Restoration (ACS Component #4)** in this watershed would be accomplished primarily through timber sale related projects. This particular project includes the full decommissioning (remove culverts, subsoil and block) of road # 25-3-7.2A, 7.3A, 25-4-19.7 and one unnumbered spur and the decommissioning (blocking and water bar) of 25-3--8.1, 25-3-20.0, 25-4-12.0, and 25-4-24.1D for a total of 1.4 mi. and the maintenance of 16.6 mi. of existing road.

2. **To minimize the loss of soil productivity (i.e. limiting erosion, reducing soil compaction, protecting slope stability and protecting the duff layer):**

a. **Measures to limit erosion and sedimentation from roads** would consist of: (1) Maintaining or improving existing roads (Road No. 25-3-7.0, 7.1, 17.0, 19.3, 20.0, 20.1, 25-4-2.0, 12.0, 12.1, 13.1 and 24.1) to fix drainage and erosion problems. This would consist of maintaining existing culverts, installing additional culverts, and surfacing the road with crushed rock. (2) Building, using and decommissioning temporary roads in the same operating season (i.e. no over-wintering of bare erodible subgrade). When logging is completed, the roadbed would be subsoiled, water barred, blocked and seeded with native species or a sterile hybrid mix depending on availability. (3) Restricting road renovation and log hauling on unsurfaced roads to the dry season (normally May 15 to Oct. 15), however, operations would be suspended during periods of heavy precipitation. This season could be adjusted if conditions are such that no environmental damage would occur (ex. the dry season extending beyond Oct. 15). (4) Restricting in-stream work (i.e. culvert replacement and fill removal) during periods of low flow (between July 1 and September 15). These BMP's (RMP, pg. 136-7) are designed to minimize sedimentation and protect water quality.

b. **Measures to limit soil erosion and sedimentation from logging** would consist of: (1) requiring skyline yarding where cable logging is specified. This method limits ground disturbance by requiring partial suspension during yarding (i.e., the use of a logging system that "suspends" the front end of the log during in-haul to the landing, thereby lessening the "plowing" action that disturbs the soil). In some limited, isolated areas partial suspension may not be physically possible due to terrain or lateral yarding. Excessive soil furrowing would be hand waterbarred. (2) Dry season logging would be required in or on portions of Units 7B, 7E, 7F, 17A, 19A, 19B, 19D, 13A and 13B (see Appendix D). Ground based logging would be limited to the dry season as described below.

c. **Measures to limit soil compaction** (RMP, pg. 37) would consist of: (1) limiting ground based road right-of-way logging, (Units 7E, 19D and 13B) to the dry season (May 15 to Oct. 15), however, operations would be suspended during periods of heavy precipitation if resource damage would occur. This season could be adjusted if conditions are such that no resource damage would occur (i.e., the dry season extending beyond Oct. 15). (2) Subsoiling of decommissioned roads, temporary spur roads and skidtrails with a winged subsoiler (or equivalent) to mitigate compaction damage. Subsoiling is a practice that ameliorates soil compaction and improves water infiltration by pulling a device known as a "winged subsoiler" with a crawler tractor. Existing skidtrails from previous entries would also be tilled where practical (e.g., tilling saturated or very rocky soils or skid trails with advanced reproduction would not benefit soil productivity and therefore would not be practical). (3) Machine piling would be limited to the use of low pressure tracked type

excavators and would be limited to slopes less than 30 percent under dry soil conditions and use existing trails as much as possible. The equipment would be required to only make a single pass across a traveled path for most of the area involved and travel over slash to the maximum extent possible. Subsoiling would need be done where determined necessary by the Soil Scientist.

d. **Measures to protect the duff and surface soil layer** (RMP, pg. 37) would consist of burning of slash during the late fall to mid-spring season when the soil and duff layer (soil surface layer of fine organic material) moisture levels are high and the large CWD has not dried. This practice would protect the soil duff layer and the CWD from being totally consumed by fire and the surface layer from being negatively altered. The CWD reserved according to ROD guidelines would also be a source of organic material that can become incorporated into the soil structure (See para. 3b, below).

e. **Measures to protect slope stability** would consist of: (1) grouping retention trees in areas identified as having some stability concerns but not enough to warrant Riparian Reserve status (see Appendix D). The added root strength of the extra trees would help maintain stability. (2) Areas that could potentially impact the meeting of ACS objectives were dropped from the project (see Appendix D). (3) Broadcast burning would be limited on steep slopes, i.e. hand pile and burn. (4) New roads would be located in the most stable locations and with proper drainage structures. NOTE: The PDF's listed in paragraph b above would also reduce the risk of slope failure as well as limiting erosion.

3. **To provide for wildlife:**

a. Future nesting and roosting habitat for cavity dwellers would be provided by reserving most existing hard or soft snags (at least 20" in diameter and 20 ft. in height) sufficient to meet the population needs of 40% of potential population (RMP pg. 64). This has been determined to be 1.2 snags per acre. Where this quantity is lacking, additional green trees would be reserved for future snag recruitment. Note: Any snag deemed as hazardous to worker safety could be felled at the discretion of the operator and the sales administrator. Such trees would be reserved and left in place as CWD.

b. Wildlife habitat values would be maintained through the retention of six to eight large (greater than 20") green conifer trees per acre in the GMFA and twelve to eighteen trees per acre in the Connectivity/Diversity Block (Units 7A, 7B, 7C, 7E and 7F) and occasional hardwoods as a biological legacy (RMP Appendix E, pg. 150). At least 120 linear feet of CWD per acre (at least 16" in diameter and 16 ft. in length) would be preserved for the habitat of organisms that require this ecological niche (S&G, C-40, para. B). Where CWD is lacking in the above quantities, extra green trees would be reserved for future CWD recruitment (RMP pg. 65).

4. To protect air quality:

All slash burning would have an approved “Burn Plan” and be conducted under the requirements of the Oregon Smoke Management Plan and done in a manner consistent with the requirements of the Federal Clean Air Act. The Federal Clean Air Act is designed to reduce air pollution, protect human health and preserve the Nation's air resources. The Oregon Department of Environmental Quality is responsible for implementing the Federal Clean Air Act, and the Oregon Smoke Management Plan which requires the Oregon State Department of Forestry to manage the amount of smoke released into the airshed as the result of slash and field burning.

5. To protect and enhance stand diversity:

All tree species currently represented in the stand would continue to be represented in the stand after the harvest. Some large "wolf" trees (large, full crowned, limby trees) would be retained for non-vascular plant legacy attributes. Retention trees would be retained in a scattered arrangement of individual trees as well as occasional clumps of two or more trees (RMP, pg. 64). Snags and CWD would be reserved as described in paragraph three above.

6. To prevent and report accidental spills of petroleum products or other hazardous materials:

Hazardous materials (particularly petroleum products) would be stored in durable containers and located so that any accidental spill would be contained and not drain into riparian areas. All landing trash and logging materials would be removed. Accidental spills or discovery of the dumping of any hazardous materials would be reported to the Sale Administrator and the procedures outlined in the “Roseburg District Hazardous Materials (HAZMAT) Emergency Response Contingency Plan” would be followed.

7. To prevent the spread of noxious weeds:

Stipulations would be incorporated into the logging contract to prevent and/or control the spread of noxious weeds by requiring the cleaning of all equipment prior to entry on BLM lands (BLM Manual 9015 - Integrated Weed Management).

8. To protect Special Status (SS) and SEIS Special Attention Plants and Animals:

a. A Special Status (threatened or endangered, proposed threatened or endangered, candidate, State listed, Bureau sensitive and Bureau assessment) plant species location would be protected by adjustment of road location and a Special Attention (survey and

manage or protection buffer) species would be protected by removal of the site from the unit. Special Attention mollusks were found in eleven units and would be protected (see Appendix D - Concern #5). A total of nine acres were dropped from harvest to protect SS and Special Attention species.

b. If, during implementation of the proposed action, any Special Status or SEIS Special Attention species are found, evaluation for the appropriate type of mitigation needed for each species would be done.

Stipulations would be placed in the contract to halt operations if any of these Special Status or SEIS Special Attention plants or animals are found to allow time to determine adequate protective measures before operations could resume.

c. Seasonal restrictions to prohibit logging during the nesting season (March 1 to September 30) would be applied to Units 7 B, C, D and F and Unit 17 A if surveys indicate that a northern spotted owl (NSO) is nesting in the adjacent NSO core area.

9. To protect cultural resources:

Stipulations would be placed in the contract to halt operations and evaluate the appropriate type of mitigation needed to provide adequate protection; if any objects of cultural value (e.g. historical or prehistorical ruins, graves, fossils or artifacts) are found during the implementation of the proposed action.

D. Alternatives Considered but Eliminated

1. An alternative to fully decommission the 25-4-2.0 Rd., a creek bottom road that accesses Slide Creek, and replace it with a newly constructed ridge system was considered by the ID Team. This proposal was discussed with the permittee (Lone Rock Timber Co.). The permittee agreed that a ridge road was a good option but did not agree to a full decommissioning of the 2.0 Rd. citing the need to maintain access for control of wildfire.

2. An adjacent landowner suggested an alternative to not log the area and manage as an elk use area with ODF&W. This alternative would be in conflict with the RMP. The ODF&W indicated that the elk herd has caused some problems therefore they are not interested in managing elk in this area.

III. AFFECTED ENVIRONMENT

This section describes the existing environment and forms a baseline for comparison of the effects created by the alternatives under consideration. Appendix F (Analysis File) contains Specialist's Reports with supporting information for this analysis. This project lies within the Oregon Western Cascades Physiographic Province. The FSEIS describes the affected environment for this province on page 3&4-19.

A. Stand Description

Logging in this area began in the 1940's. Logging slash was occasionally burned prior to planting or seeding with Douglas-fir. Natural conifer regeneration existing at the time of harvest and resulting from seedfall has also contributed to stocking. All previously clear cut areas have been successfully regenerated on lands managed by the BLM. Many of managed stands have been precommercially thinned and fertilized. All of the plantations are fairly uniform in structure and composition.

Hickman describes three broad vegetation zones as part of the Douglas Area Soil Survey; western hemlock, grand fir, and interior valley (Hickman 1994). Zones are used to describe such things as potential production capabilities, expected vegetative response following disturbance, and plant communities. This area is a transition between the western hemlock and the grand fir zone. The highest elevations are a cool Douglas-fir/western hemlock zone. The predominant conifer species is Douglas-fir, which acts as a pioneer after a significant disturbance event such as fire. Conifer species in association include incense-cedar, western hemlock, western red cedar, grand fir, and Pacific yew. Red alder, madrone, chinquapin, and maple are common hardwoods. Shrubs, grass and forbs are prevalent and include ocean spray, hazel, salal, Oregon grape, sword fern, and poison oak. Scotch broom and blackberry are weeds that have proliferated along roads and in disturbed areas.

B. General Site Description

The proposed sale area is in a transition zone between the Coast Range and western Cascade Mountains. The **geology** consists of both sedimentary and volcanic rock. The **topography** of the area is gentle to very steep, with a few small areas exceeding 80% slope. All aspects are represented. Elevations of the proposed units range from about 1000 to 2100 feet above sea level.

The **climate** is characterized by cool and mild winters and relatively dry summers. Precipitation falls as both rain and snow, and averages approximately 50 inches; with 85% of the total yearly values occurring between October and April. Higher precipitation (~60 inches) will occur at higher elevations due to orographic effects. Temperatures average about 70

degrees F in the summer and 40 degrees F in the winter. Temperatures over 100 degrees F in late summer and below freezing in winter are not uncommon, however, periods of temperature extremes are usually of short duration.

Soils in the area were formed of the Flourney, Roseburg, and Colestin-Fisher Formations over parent material varying from sandstone-siltstone to volcanic tuffs. The soils are predominantly well drained, loamy to clayey and moderately deep to very deep. Some areas have shallow soils as a major component. The soil textures are mostly moderately erodible under bare soil conditions. Productivity varies dependant on soil type, depth to bedrock, aspect and elevation. Douglas-fir site index is variable in this area, ranging from low where soils are shallow to moderately high where soils are deeper and well drained (see Soil's Report, Appendix F).

C. Affected Resources

Botanical - A Special Attention plant, *Allotropa virgata* (Survey and Manage 1 and 2), and a Special Status plant, *Astragalus umbraticus* (BLM tracking species), were observed in the project area. Scotch broom is the only widespread noxious weed, occupying road and waste area locations in the project area.

Cultural Resources - No cultural resources were found in the project area as the result of surveys.

Fisheries - The proposed units are in tributaries to Gassy Creek, Field Creek, Slide Creek, and a small unnamed tributary. Gassy Creek is a major tributary to Calapooya Creek. ODF&W stream habitat survey data is available for Field Creek, Slide Creek, and Gassy Creek (see Specialist Report, Appendix F). These surveys indicate that the major fish bearing streams downstream of the proposed action are degraded. Lack of Large Woody Debris (LWD) appears to be a limiting factor for stream habitat quality in the lower reaches of all of the streams in the vicinity of the proposed action. As is typical of the type of streams near the proposed action, the amount of LWD generally increases as you move upstream. High width to depth (W/D) ratios also stand out as a limiting factor. High W/D ratios can cause excessive water temperature increases and bank erosion.

Hydrology - Elevations between approximately 1400 feet and 4000 feet may alternately receive rain or snow and have been termed the "transient snow zone" (Harr, 1981, 1986). Rain-on-snow is the term for cloudy periods when warm winds and rain combine to melt snow rapidly, especially in open areas where trees have been harvested. Storm events could lead to increased rates of water delivery to the hydrologic system resulting in increased stream flows, landslides and downstream flooding. All of the proposed units have acreage within the transient snow zone; and rain-on-snow events are expected to occur occasionally. The State of Oregon Department of Environmental Quality (DEQ) does not identify Gassy Creek as water quality

limited (WQL) in the 1998, 303(d) list of WQL waterbodies. However, the list identified Calapooya Creek as WQL for temperature, habitat modification, and sedimentation at the confluence with Gassy Creek. The downstream beneficial uses of water are predominately resident fish and aquatic life, salmonid spawning and rearing, wildlife, irrigation, livestock watering, and on-site aquatic life and wildlife uses in the perennial reaches.

Wildlife - One Northern spotted owl nest (NSO) tree was located in the vicinity of the project in Section 17. A NSO core area in Section 17 also includes one known nest tree. Bald eagles are known to nest within 1.5 miles of Unit 19D and have been observed utilizing areas in the vicinity of the project for foraging as well as golden eagles and other large raptors. Elk utilize the project area and nearby bottom lands for both forage and cover. Columbian white-tailed deer have been noted during big game surveys in the Gassy Creek drainage. Red tree voles have not been located in any of the proposed units.

IV. ENVIRONMENTAL CONSEQUENCES

This section forms the scientific and analytical basis for the comparisons of the alternatives. The probable consequences (impacts, effects) each alternative would have on selected resources are described. This section is organized by the alternatives and the effects on the key issue identified in section I paragraph G, as well as the selected resources. Analysis considers the direct effects (effects caused by the action and occur at the same place and time), indirect effects (effects caused by the action and occur later in time or farther removed in distance) and cumulative effects (impacts of the action when added to other past, present and reasonably foreseeable future actions) on the resource values. The environmental consequences for the various resources are more fully analyzed in Appendix F (Analysis File). This Appendix contains Specialist's Reports and the supporting information for this analysis. The EIS and FSEIS analyzes the environmental consequences in a broader context. This EA does not attempt to reanalyze all possible impacts that have already been analyzed in these umbrella documents but rather to identify the particular site specific impacts that could reasonably occur.

Some irreversible and irretrievable commitment of resources would result from the implementation of this project. An irreversible commitment is a commitment that cannot be reversed whereas an irretrievable commitment is a commitment that is lost for a period of time. An irreversible commitment of petroleum fuels for logging and timber hauling as well as the loss of rock from quarries for crushed rock used in the reconstruction of the road system would result from the proposed action. The irretrievable loss of the ecological and human values associated with old-growth forest would result, if this area is managed on an 80 to 150 year rotation.

A. No Action Alternative:

This alternative would not meet the RMP (pg. 15) objective of producing forest commodities that would contribute to the local economy. It would not realize opportunities for restoration of past disturbance. Road densities and conditions would remain unchanged. All of the old natural stands will continue to slowly develop towards the western hemlock climax until a natural disturbance event creates conditions favorable for Douglas-fir regeneration. If fire is excluded, Douglas-fir will probably become less predominant in these stands.

Key Issue: The Impacts of the Deteriorating Transportation System on Water Quality

The existing roads would not be improved, and sediment delivery to streams would continue due to road related slides and insufficient drainage features. Road decommissioning would not occur that otherwise would have a positive benefit to the aquatic environment. The road related drainage and sediment problems from the existing road system would continue to impact to fish populations and keep the spawning and rearing habitats in a suppressed state. Ground water would continue to be intercepted in places, creating surface flow that would route water to the stream channel more quickly, reducing the quality of summer and winter rearing habitat by increasing winter flows and decreasing summer flows.

Botanical - There would be no adverse impacts to the two species of interest. A no-action would result in increasing canopy closure over time which is slightly detrimental to *Astragalus umbraticus* which seems to thrive in more open canopy habitat.

Fisheries - Environmental consequences to fisheries resources can occur either as direct impacts to fish (e.g. the actual killing of a fish), or impacts to habitat that can indirectly affect fish (e.g. increased water temperatures that result in decreased fish growth, the removal of LWD from a stream, or the disruption of the processes that provide LWD to the stream channel. No direct impacts would occur to the fish populations or habitat as a result of timber harvest or road construction. There would be no removal of LWD. Stream temperatures would be unaffected because there would be no shade manipulation. No harvest or road related sediment increases would occur because there would be no harvest or road building with stream crossings.

Hydrology - The hydrology of the Gassy Creek drainage would not be affected due to vegetation removal. The existing roads would not be improved, and sediment delivery to streams will continue due to road related slides and insufficient drainage features. No road decommissioning would occur, which otherwise may have a positive benefit to the aquatic environment.

Soils - The risk of a landslide reaching a stream would be a slightly lower than the Action Alternative. Harvest related impacts of compaction from ground-based and cable yarding would not occur. Soil disturbance and associated productivity loss from temporary road construction would not occur. Road improvement and renovation would not occur along with

the first season sediment flush into streams, however, in the long-term there would be considerably more impacts as roads needing renovation would continue to send large amounts of sediment into streams. Existing road decommissioning would not occur. Those areas would remain compacted and unproductive.

Wildlife - There would be no direct impacts to wildlife as a result of No Action. Habitat would remain stable for old-growth dependent species. Over the long-term, species dependent upon early seral stages would lose habitat as current grass/shrub areas progress into closed conifer type habitat. NSO would gain favorable habitat as currently young stands progressed into more mature stages of coniferous habitat.

B. Proposed Action Alternative:

The following paragraph discusses the direct impacts (i.e. impacts caused by the action at the same time and place) and indirect impacts (i.e. impacts caused by the action but occur later in time and farther removed in distance) of the Proposed Action.

Key Issue: The Impacts of the Deteriorating Transportation System on Water Quality

Short duration sediment pulses are likely to route some sediment into streams due to timber hauling, road renovation and improvements, but improvements in road drainage and cutslope stabilization is expected to improve sediment and flow routing above current conditions. The short duration pulses of sediment is not expected to alter the physical integrity of the aquatic system, streambank stability, or the downstream beneficial uses, including the water quality of Gassy and Calapooya Creeks.

Botanical - Reduced habitat and diversity of plant species on approximately one acre due to the temporary building of roads.

Fisheries - The Riparian Reserve would protect the fisheries resources from direct impacts. LWD recruitment mechanisms and stream shade would be protected and preserved. Since stream temperatures and shade are positively correlated, stream temperatures would be maintained. The FEMAT report (pg. V-28) cites a case study in which a one site potential tree buffer was deemed adequate to prevent harvest related sediment increases in stream channels. Based on this, no harvest related sediment increases are anticipated. Sediment increases are expected due to road renovation and improvements. These increases are expected to be short-term, however, and would be minimized by requiring BMP's and limiting work to the dry season. Log hauling has been demonstrated to have a small increase in sediment yield. This too would be a short-term effect.

The biggest potential indirect impact to fish habitat creating mechanisms is alterations in the flow regime. It is difficult to quantify direct linkages among processes and functions outside the stream channel to in-channel conditions and biological factors. No known studies exist that documents the impacts to stream channels due to regeneration harvest with riparian buffers and no permanent road building. Any impacts, however, are expected to be within the range analyzed in the FSEIS (pg. 3&4-190).

Hydrology - There should be no direct impacts to hydrology, water quality, or channel conditions associated with the proposed harvest of these units. Riparian Reserves would maintain and protect important components of the aquatic environment; such as, stream shade to reduce incoming short wave radiation and sediment from upslope areas. Sediment increases are expected during culvert replacements and road improvements, but these increases are expected to be short duration, and would be minimized by the use of BMP's and seasonal restrictions for this work. No yarding through riparian areas or road construction would occur such that components of the aquatic system would be affected.

The indirect impact of potential increases in water available for runoff could result due to vegetation removal. The removal of vegetation (see Hydrologist Report) is expected to produce negligible to small increases in annual water yields, low flows, spring and fall peak flows. However, storms are small during the early fall and spring months, so large relative flow increases are limited to the smaller flow events. Later in the fall, as soil moisture differences become less important, the magnitude of peak flow differences becomes smaller or nonexistent (Megahan and Thomas, 1998). There would likely be no significant changes in the timing, duration, magnitude, or spatial distribution of peak, high, low, and in-stream flows. Any increase in flow is not expected to alter channel morphology, bed-load movement, or increase sediment delivery due to bank erosion. There is also a low risk of sediment chronically reaching stream channels (from upslope sources) because of the establishment of Riparian Reserves. Impacts associated with new temporary road construction, road renovation, road upgrades, and road decommissioning should be minimized due to seasonal restrictions, adherence to BMP's and the reclamation of temporary roads during the same dry season. Furthermore, only 20 acres (Units 7A and 7C) would be yarded during the winter season. The proposed temporary roads would have no stream crossings and are outside all Riparian Reserves.

Soils - Compaction, soil loss through erosion and mass movement (slumps and landslides), displacement of soil through mechanical means and alteration of the soil's nutrient, physical and biological properties through slash burning are the main direct and indirect impacts that would reduce soil productivity. A light scattering of small (less than 0.1 acre) landslides could result from this action. The risk of larger landslides would be small. The risk of a landslide or debris

torrent reaching a stream would be low. Road renovation, improvement and decommissioning would result in some sedimentation flush into streams during the first season but decrease thereafter; however, long-term erosion and sedimentation would still be considerably less than the no action alternative.

Wildlife - Harvest of old-growth and mature forest would result in direct loss of structure and environmental conditions that late seral species depend upon. No adverse impacts to eagle populations are expected. Harvest is expected to create foraging habitat for these species. Harvest is not expected to have any impact to the small population of columbian white-tailed that now occur in the lower drainage. The harvest would remove suitable NSO habitat. Habitat removal, increased fragmentation and disturbance would have a “may effect, likely to adversely affect” on the NSO. The effects on cavity dwellers would be varied, depending on species. Due to the reduction in habitat, population levels of many species currently in the project area may decline. Due to the presence of intact riparian areas and other withdrawals adjacent to the harvest units, species such as cavity dwellers and red tree voles now found in the area would have suitable habitat and continue to be present in the general area.

C. Cumulative Impacts Analysis

The following paragraph discusses the cumulative impacts (i.e. the incremental impacts of the action when added to other past, present and foreseeable future actions).

Fisheries - On federal lands, the most significant management activities affecting fish habitat are timber harvest and associated activities. By applying the S&G's, the FEMAT (pg. V-69) concluded that there was a 60-80% chance of maintaining habitat to support well distributed populations of anadromous fish. This conclusion was made independent of private lands. Based on this, any cumulative impacts resulting from this action are expected to be within the range analyzed in the FSEIS.

Hydrology - The changes in vegetation and potential cumulative effects to water quality, hydrology, and channel condition are expected to be within the range of variability analyzed in the FSEIS. Since very little acreage is being harvested in the Transient Snow Zone (TSZ), the percent recovery would remain above 75% and the risk of warm rain-on-melting snow events causing channel forming floods is low. Road densities would remain the same because no permanent roads are proposed to be constructed. The mouth of Gassy Creek was found to be stable from data collected at stream cross sections; and any anticipated increases in flow are likely to be accommodated by this stream type without detrimental effects to aquatic habitat.

Soils - The action would not add to the large negative impact of past ground-based activity to soil productivity at the sixth-field watershed level. There would be a small cumulative increase in soil productivity loss at the sixth-field watershed level due to temporary road construction. Cumulative road-related sedimentation into streams at the sixth-field watershed level should be substantially less.

Wildlife - Harvest would reduce an additional 144 acres of late successional forest and replace it with early seral forest. Harvest would reduce the effectiveness (patch size) of older age habitat remaining in the four sections of the project. Legacy elements such as snags, large green trees and down wood would allow some species that depend upon those elements to persist over time. Other species that requires the environmental and cover elements associated with an older age forest would not persist. Wildlife species that prefer an early seral stage would be benefitted. Potential sale activity would impact one of four NSO sites in the Calapooya Watershed.

V. CONTACTS, CONSULTATIONS, AND PREPARERS

A. Agencies, Organizations, and Persons Consulted

The Agency is required by law to consult with the following federal and state agencies (40 CFR 1502.25):

1. Threatened and Endangered Species Section 7 Consultation - The Endangered Species Act of 1973 (ESA) requires consultation to ensure that any action that an Agency authorizes, funds or carries out is not likely to jeopardize the existence of any listed species or destroy or adversely modify critical habitat. The District provides its assessment in a Biological Assessment (BA) and the regulatory agencies respond with a Biological Opinion (BO). A BO has not been received from the **US Fish and Wildlife Service (FWS)**. The Roseburg District's BA for Endangered Species consultation was submitted to FWS on February 22, 1999. The BA was a "may effect likely to adversely affect" for the NSO and an "Incidental Take Statement" is anticipated as well as terms and conditions for the Incidental Take having to do with seasonal restrictions for the NSO. "Incidental Take" is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency. A BO has not been received from the **National Marine Fisheries Service**. The Roseburg District's BA for Endangered Species consultation was submitted to NMFS on May 18, 1999. The was a "may effect likely to adversely affect" for Umpqua River cutthroat trout, Oregon Coast steelhead trout and Oregon Coast coho salmon and an "Incidental Take Statement" is anticipated.

2. Cultural Resources Section 106 Consultation - Consultation as required under section 106 of the National Historic Preservation Act with the **State Historical Preservation Office (SHPO)** was completed on December 22, 1998 with a "No Effect" determination.

B. Public Notification

1. Notification was provided to affected **Tribal Governments** (Confederated Tribes of the Coos, Lower Umpqua and Siuslaw; Grande Ronde; Siletz; and the Cow Creek Band of Umpqua Indians). No comments were received.

2. Letters were sent to five **adjacent landowners**. One comment was received (see Appendix G - Public Contact).
3. The **general public** was notified via the Roseburg District Planning Update (Winter 1997-1998) going to approximately 150 addressees. These addressees consists of members of the public that have expressed an interest in Roseburg District BLM projects. Comments were received from Francis Eatherington representing Umpqua Watersheds, Inc. (see Appendix D - Issue Identification Summary).
4. Notification will also be provided to certain **State, County and local government** offices (see Appendix G - Public Contact).
5. A 30-day **public comment period** will be established for review of this EA. A Notice Of Availability will be published in the News Review. This EA and its associated documents will be sent to all parties who request them. If the decision is made to implement this project, a notice will be published in the News Review, a daily newspaper of general circulation in Roseburg, Oregon. If the decision is made to implement this project, a notice will be published in the News Review.

C. List of Preparers

Lyle Andrews	Engineering Lead
Isaac Barner	Cultural Resources
Kevin Cleary	Fuels Management
Dan Couch	Watershed Analysis
Dan Cressy	Soils
Dave Erickson	Recreation / VRM
Dick Greathouse	Layout Forester
Al James	Silviculture
Fred Larew	Lands
Jim Luse	EA Coordinator / EA Preparer
Jerry Mires	Wildlife
Ed Rumbold	Hydrology
Elijah Waters	Fisheries
Steve Weber	Presale Forester
Ron Wickline	Botany

CRITICAL ELEMENTS OF THE HUMAN ENVIRONMENT

The following elements of the human environment are subject to requirements specified in statute, regulation, or executive order. These resources or values are either not present or would not be affected by the proposed actions or alternatives, unless otherwise described in this EA. This negative declaration is documented below by individuals who assisted in the preparation of this analysis.

Element	Responsible Position	Initials	Date	Remarks
Air Quality	Fuels Management Specialist			
Areas of Critical Environmental Concern	Environmental Specialist			
Cultural Resources	Archeologist			
Environmental Justice	Environmental Specialist			
Farm Lands (prime or unique)	Soil Scientist			
Flood Plains	Hydrologist			
Native American Religious Concerns	Environmental Specialist			
Threatened or Endangered Species (wildlife)	Wildlife Biologist			
Threatened or Endangered Species (plants)	Botanist			
Threatened or Endangered Species (fish)	Fisheries Biologist			
Hazardous/Solid Wastes	District Hazardous Materials Coordinator			
Water Quality Drinking/Ground Water	Hydrologist			
Wetlands/Riparian Zones	Hydrologist			
Wild and Scenic Rivers	Recreation Planner			
Wilderness	Recreation Planner			

References Cited

- Biological Opinion and Conference Opinion - Implementation of Land Management Plans (USFS) and Resource Management Plans (BLM) (NMFS, March 18, 1997)
- Final - Roseburg District Proposed Resources Management Plan / Environmental Impact Statement (PRMP/EIS) (October 1994)
- Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old Growth Forest Related Species Within the Range of the Northern Spotted Owl (FSEIS) (Feb. 1994)
- Forest Ecosystem Management: An Ecological, Economic, and Social Assessment, Report of the Forest Ecosystem Management Assessment Team [FEMAT] (July 1993)
- Integrated Weed Management, BLM Manual 9015 - Dec. 2, 1992
- Interim Guidance for Survey and Manage Component 2 Species: Red Tree Vole, BLM - Instruction Memorandum No.OR-97-009, Nov. 4, 1996
- Management of Wildlife and Fish Habitats in Forests of Western Oregon and Washington, USDA - Forest Service (June 1885)
- National Environmental Policy Handbook (BLM Handbook H-1790-1)
- 1998 Oregon Statewide Assessment of Nonpoint Sources of Water Pollution, Oregon State Department of Environmental Quality, Portland, Oregon
- Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (ROD) and Standards and Guidelines for Management of Habitat for Late-Successional and Old Growth Related Species Within the Range of the Northern Spotted Owl (S&G) (April 13, 1994)
- Roseburg District Hazardous Materials (HAZMAT) Emergency Response Contingency Plan (FY 1998)
- Roseburg District Record of Decision and Resources Management Plan (RMP) (June 2, 1995)
- Western Oregon Transportation Management Plan, June 1996; BLM - Oregon State Office, USDI
- Other references as cited in the individual Specialist's Reports (Appendix F - Analysis File)